

REMARKS

SUMMARY:

The present application sets forth original claims 1-34, of which claims 1, 15 and 23 are independent claims.

Original claim 33 is objected to for an informality. Original claims 1, 5, 11, 23, 26 and 31 stand rejected under 35 U.S.C § 102(e) as being allegedly anticipated by U.S. Patent No. 6,587,327 (Devoe et al.) Original claims 15-16 stand rejected under 35 U.S.C § 102(e) as being allegedly anticipated by U.S. Patent No. 6,594,136 (Kuroda et al.) Original claims 17-18 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kuroda et al. Original claims 3-4 and 24-25 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Devoe et al. Original claim 22 is provisionally objected to under 37 C.F.R. § 1.75 should claim 11 be found allowable.

Responses to the characterizations summarized above (including traversal of each prior art rejection) are hereafter presented with respect to each individual argument presented by the Examiner.

REJECTION OF ORIGINAL CLAIMS 1, 5, 11, 23, 26 and 31 (35 U.S.C. § 102(e)):

Original claims 1, 5, 11, 23, 26 and 31 stand rejected under 35 U.S.C § 102(e) as being allegedly anticipated by U.S. Patent No. 6,587,327 (Devoe et al.) Based on the following remarks, Applicants respectfully traverse such alleged anticipation.

Present claim 1 sets forth a multilayer electronic device including a plurality of dielectric layers, a plurality of electrode layers, and at least one respective first and second transition layer electrode portion. The plurality of electrode layers are interleaved with selected of the plurality of dielectric layers to form a multilayered arrangement defined by first and second opposing surfaces and a plurality of side surfaces. The transition layer electrode portions are provided on the first surface of the multilayered arrangement. Furthermore, as presently amended, each electrode layer extends to and is exposed along at least one side surface of the multilayered arrangement.

Numbered pages 3 and 4 of the September 3, 2003 Office Action set forth that Devoe et al. disclose all elements of claim 1, including at least one respective first (68) and second (66) transition layer electrode portions provided on the first surface of said multilayered arrangement. However, the arrangement in the capacitor array of Devoe et al. is different from the arrangement set forth in present claim 1. Devoe et al. disclose an upper capacitor section 60 with plates 10 and 11 extending from conductive contacts 12 and 13. A lower capacitor section 62 includes a floating interior plate 76 immediately adjacent to the upper capacitor section 60 and capacitively coupled to two additional internal plates 66 and 68.

Present claim 1 sets forth that the first and second transition layer electrode portions are provided on the first surface of the multilayered arrangement of dielectric and electrode layers. However, the two internal plates disclosed in Devoe et al. are provided on top of an arrangement of dielectric layers and floating interior plate 76. Therefore, either Devoe et al. do not disclose providing first and second transition layer electrode portions on the first surface of the multilayered arrangement, or floating interior plate 76 has to be considered as one of the electrode layers in the multilayered arrangement.

If the latter is true and interior plate 76 is one of the electrode layers, then Devoe et al. still do not disclose all elements of claim 1, because claim 1 sets forth that each electrode layer extends to and is exposed along a selected side surface of the multilayered arrangement. Floating interior plate 76 clearly does not extend to a side surface of the configuration in Devoe et al. (see Fig. 9A). As such, Devoe et al. do not disclose all elements of present claim 1.

Applicants further note that modification of the technology set forth in Devoe et al. to extend the floating interior plate to one or more side surface of the multilayered arrangement would change the principle of operation of such reference. More particularly, if the floating interior plate 76 were modified to extend to a side of the device as set forth in claim 1, the particular combination of capacitance represented in Fig. 9B of Devoe et al. would be modified. Applicants note that according to §2143.01

of the MPEP, a proposed modification cannot render the prior art unsatisfactory for its intended purpose or change the principle of operation of a reference.

Devoe et al. fail to disclose all elements of claim 1, including the provision of at least one respective first and second transition layer electrode portion on the first surface of the multilayered arrangement and the provision of each electrode layer as extending to and exposed along at least one side surface of the multilayered arrangement. As such, Devoe et al. cannot by law serve to anticipate claim 1, and thus reconsideration of the alleged anticipation is respectfully requested.

With regards to claim 5, Applicants note that claim 5 depends from otherwise allowable present claim 1 and further limits same. Since the subject matter set forth in claim 1 is allowable over Devoe et al. as established in the above arguments, claim 5 should also be allowed and acknowledgement of the same is earnestly solicited.

With regard to claims 11 and 22, Applicants note that Devoe et al. do not disclose all elements of such claims as presently amended. Present claims 11 and 22 respectively set forth that the at least one first and second peripheral terminations extend along an entire dimension of a respective selected side surface of the multilayer device and wrap around to at least one side surface adjacent to the respective selected side surface. Devoe et al. disclose opposite side metallizations that extend from selected side surfaces and wrap around to top and bottom surfaces, not adjacent side surfaces. Such terminations are provided in such a fashion to serve as lands for surface mounting the capacitor to traces on a circuit board (see Fig. 2A and corresponding description). Since Devoe et al. do not disclose peripheral terminations provided in such an orientation as set forth in claims 11 and 22, Applicants respectfully submit that present claims 11 and 22 are not anticipated by Devoe et al. and acknowledgement of the same is respectfully requested. (Applicants further note that present amendments to claim 22 are submitted to correct an inadvertent typographical error regarding claim dependency.)

With regards to original claim 23, Applicants note that such claim sets forth a multilayer capacitor including a plurality of first and second layers alternately stacked in a multilayered assembly, the multilayered assembly characterized by first and second

opposing surfaces and a plurality of side surfaces. The first and second layers each comprise a sheet of dielectric material partially covered by a first or second electrode plate. Each first and second electrode plates are exposed along selected side surfaces of the multilayered assembly. A transition layer comprising a sheet of dielectric material and at least one respective first and second transition layer electrode portion provided thereon is provided on the first surface of the multilayer assembly.

Numbered pages 4 and 5 of the September 3, 2003 Office Action set forth that Devoe et al. disclose all elements of claim 23. However, the arrangement in the capacitor array of Devoe et al. is different from the arrangement set forth in present claim 23. Devoe et al. disclose an upper capacitor section 60 with plates 10 and 11 extending from conductive contacts 12 and 13. A lower capacitor section 62 includes a floating interior plate 76 immediately adjacent to the upper capacitor section 60 and capacitively coupled to two additional internal plates 66 and 68.

Present claim 23 sets forth that the transition layer (including a sheet of dielectric material and at least one respective first and second transition layer electrode portions) is provided on the first surface of the multilayered arrangement of first and second layers. However, the two internal plates disclosed in Devoe et al. are provided on top of an arrangement of dielectric layers and floating interior plate 76. Therefore, either Devoe et al. do not disclose providing a transition layer on the first surface of the multilayered arrangement, or floating interior plate 76 and its adjacent dielectric layer has to be considered as one of the first or second layers in the multilayered assembly.

If the latter is true and interior plate 76 is one of the first or second electrode plates, then Devoe et al. still do not disclose all elements of claim 23 because claim 23 sets forth that each first and second electrode plate is exposed along selected side surfaces of the multilayered assembly. Floating interior plate 76 clearly does not extend to a side surface of the configuration in Devoe et al. (see Fig. 9A). As such, Devoe et al. do not disclose all elements of present claim 23.

Applicants further note that modification of the technology set forth in Devoe et al. to extend the floating interior plate to one or more side surface of the multilayered arrangement would change the principle of operation of such reference. More

particularly, if the floating interior plate 76 were modified to be exposed along selected sides of the device as set forth in claim 23, the particular combination of capacitance represented in Fig. 9B would be modified. Applicants note that according to §2143.01 of the MPEP, a proposed modification cannot render the prior art unsatisfactory for its intended purpose or change the principle of operation of a reference.

Devoe et al. fail to disclose all elements of claim 23 and thus cannot by law serve to anticipate such claim. As such, reconsideration of the alleged anticipation is respectfully requested.

With regard to claims 26 and 31, Applicants note that such claims variously depend from otherwise allowable present claim 23 and further limit same. Since the subject matter set forth in claim 23 is allowable over Devoe et al. as established in the above arguments, claims 26 and 31 should also be allowed and acknowledgement of the same is earnestly solicited.

REJECTION OF ORIGINAL CLAIMS 15-16 (35 U.S.C. §102(e)):

Original claims 15-16 stand rejected under 35 U.S.C §102(e) as being allegedly anticipated by U.S. Patent No. 6,594,136 (Kuroda et al.) Based on the following remarks, Applicants respectfully traverse such alleged anticipation.

Present claim 15 sets forth a multilayer capacitor including a plurality of dielectric layers and respective pluralities of first and second electrode layers interleaved with the dielectric layers to form a multilayered assembly. Selected of the first and second electrode layers respectively include a plurality of electrode tabs extending to and exposed along selected side surfaces of the multilayered assembly. At least one first via termination is provided through the topmost layer and is electrically connected to an electrode tab of one of the first electrode layers, and at least one second via termination is provided through the topmost layer and is electrically connected to an electrode tab of one of the second electrode layers.

Kuroda et al. fail to disclose all elements of claim 15 as presently amended. In particular, such reference fails to disclose first and second via terminations that connect to respective electrode tabs extending to and exposed along selected side surfaces of

the device. As illustrated in the Figures of Kuroda et al., major surface terminal electrodes 14 and 15 connect to respective first and second internal electrodes 10 and 11. Although internal electrodes 10 and 11 do include tab portions, such tab portions are only utilized for connection to side-surface peripheral terminations 12 and 13. As such, Kuroda et al. do not disclose connection of first and second via terminations to the tab portions of respective first and second electrode layers as set forth in present claim 15.

Applicants further note that modification of the technology set forth in Kuroda et al. to incorporate via terminations connected to electrode layer tabs as set forth in present claim 15 would change the principle of operation of such reference. As set forth in column 7, lines 44-62 of Kuroda et al., it is intended that currents flow in a variety of directions in the approximate center portion of the major surface (via electrodes 14 and 15) and also in the vicinity of the side surfaces (via electrodes 12 and 13) such that magnetic fluxes created by these currents are efficiently canceled, and the generation of magnetic fluxes is thus controlled. If major-surface terminal electrodes 14 and 15 were moved from their central locations to sides of the capacitor device so they could potentially form connection to electrode layer tabs, the intended advantage of canceling magnetic flux in the device would not be realized. Applicants note that according to §2143.01 of the MPEP, a proposed modification cannot render the prior art unsatisfactory for its intended purpose or change the principle of operation of a reference.

Kuroda et al. fail to disclose all elements of claim 15, including the provision of first and second electrode layers respectively including a plurality of electrode tabs extending to and exposed along selected side surfaces of the multilayered assembly and first and second via terminations respectively connected to an electrode tab of a respective first and second electrode layer. Furthermore, Kuroda et al. teach away from a design modification to include such elements. As such, Kuroda et al. cannot by law serve to anticipate claim 15, and thus reconsideration of the alleged anticipation is respectfully requested.

With regards to claim 16, Applicants note that claim 16 depends from otherwise allowable present claim 15 and further limits same. Since the subject matter set forth in claim 15 is allowable over Kuroda et al. as established in the above arguments, claim 16 should also be allowed and acknowledgement of the same is earnestly solicited.

REJECTION OF ORIGINAL CLAIMS 17-18 (35 U.S.C. §103(a)):

Original claims 17-18 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Kuroda et al.

With regard to claims 17-18, Applicants note that such claims depend from otherwise allowable present claim 15 and further limit same. Since the subject matter set forth in claim 15 is allowable over Kuroda et al. as established in the arguments in the above section, claims 17-18 should also be allowed and acknowledgement of the same is earnestly solicited.

REJECTION OF ORIGINAL CLAIMS 3-4 AND 24-25 (35 U.S.C. §103(a)):

Original claims 3-4 and 24-25 stand rejected under 35 U.S.C. § 103(a) as being allegedly unpatentable over Devoe et al.

Based on the arguments presented above with respect to present claim 1, Applicants submit that such claim should be allowed over Devoe et al. Since claims 3-4 variously depend from otherwise allowable claim 1 and further limit same, claims 3-4 should also be allowed. Acknowledgement of the same is earnestly solicited.

Similarly, based on the arguments presented above with respect to original claim 23, Applicants submit that such claim should be allowed over Devoe et al. Since claims 24-25 variously depend from otherwise allowable claim 23 and further limit same, claims 24-25 should also be allowed. Acknowledgement of the same is earnestly solicited.

With regard to original claims 10 and 30, numbered pages 9 and 10 of the September 3, 2004 Office Action set forth that it would have been obvious to one having ordinary skill in the art to form all the electrode layers and the transition layer electrode portions from ruthenium oxide, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended

use as a matter of obvious design choice. Utilization of ruthenium oxide as set forth in original claims 10 and 30 is intended to provide a predetermined amount of equivalent series resistance (ESR). Applicants respectfully submit that modification of the electrode plates in Devoe et al. to include ruthenium oxide would render such reference unsatisfactory for its intended purpose. Devoe et al. realize that there is a fine compromise between capacitance value and ESR and inductance in a capacitor. It teaches that low ESR is desirable and specifically aims to reduce ESR in several embodiments (see col. 2, lines 24-26, col. 6, lines 7-8, and col. 7, lines 10-12). Since reduced ESR (or minimum ESR levels for a given desired capacitance level) is an intention of the devices in Devoe et al., it would not be obvious to modify the electrodes to provide a further source of ESR. In accordance with §2143.01 of the MPEP, a proposed modification cannot render the prior art unsatisfactory for its intended purpose or change the principle of operation of a reference. As such, claims 10 and 30 are not unpatentable over Devoe et al. and acknowledgement of the same is earnestly solicited.

CONCLUSION:

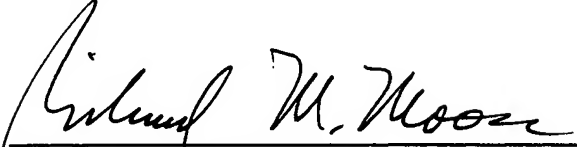
Inasmuch as all outstanding issues have been addressed, it is respectfully submitted that the present application, including claims 1-34, is in complete condition for issuance of a formal Notice of Allowance, and action to such effect is earnestly solicited. The Examiner is invited to telephone the undersigned at his convenience should only minor issues remain after consideration of this response in order to permit early resolution of the same or if he has any questions regarding this matter.

Respectfully submitted,

DORITY & MANNING,
ATTORNEYS AT LAW, P.A.

December 28, 2004

Date

A handwritten signature in cursive script, reading "Richard M. Moose", written over a horizontal line.

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APPENDIX A